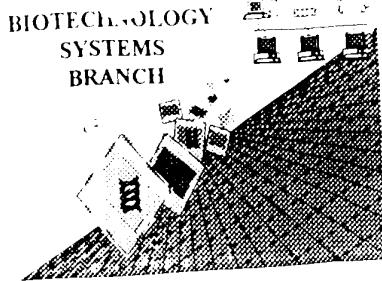


RAW SEQUENCE LISTING

ERROR REPORT



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/820,053
Source: O1PE
Date Processed by STIC: 4/11/2001

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.
PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:
1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE
APPLICANT, WITH A NOTICE TO COMPLY or,
2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A
NOTICE TO COMPLY
FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.
PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)
PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER
VERSION 3.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND
TRADEMARK OFFICE WEBSITE. SEE BELOW:

Checker Version 3.0

The Checker Version 3.0 application is a state-of-the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 - 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST 25.

Property Organization (WIPO) Standard ST 25. Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO). Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

Checker Version 3.0 can be downloaded from the USPTO website at the following address:
<http://www.uspto.gov/web/offices/pac/checker>

Raw Sequence Listing Error Summary

ERROR DETECTED SUGGESTED CORRECTION

SERIAL NUMBER: 09/820,053

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- | | |
|--|--|
| <input type="checkbox"/> 1 Wrapped Nucleic | <p>The number/text at the end of each line "wrapped" down to the next line.
This may occur if your file was retrieved in a word processor after creating it.
Please adjust your right margin to .3, as this will prevent "wrapping".</p> |
| <input type="checkbox"/> 2 Wrapped Aminos | <p>The amino acid number/text at the end of each line "wrapped" down to the next line.
This may occur if your file was retrieved in a word processor after creating it.
Please adjust your right margin to .3, as this will prevent "wrapping".</p> |
| <input type="checkbox"/> 3 Incorrect Line Length | <p>The rules require that a line not exceed 72 characters in length. This includes spaces.</p> |
| <input type="checkbox"/> 4 Misaligned Amino Acid Numbering | <p>The numbering under each 5th amino acid is misaligned. This may be caused by the use of tabs between the numbering. It is recommended to delete any tabs and use spacing between the numbers.</p> |
| <input type="checkbox"/> 5 Non-ASCII | <p>This file was not saved in ASCII (DOS) text, as required by the Sequence Rules.
Please ensure your subsequent submission is saved in ASCII text so that it can be processed.</p> |
| <input type="checkbox"/> 6 Variable Length | <p>Sequence(s) _____ contain n's or Xaa's which represented more than one residue.
As per the rules, each n or Xaa can only represent a single residue.
Please present the maximum number of each residue having variable length and indicate in the (ix) feature section that some may be missing.</p> |
| <input type="checkbox"/> 7 PatentIn ver. 2.0 "bug" | <p>A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequence(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies primarily to the mandatory <220>-<223> sections for Artificial or Unknown sequences.</p> |
| <input type="checkbox"/> 8 Skipped Sequences (OLD RULES) | <p>Sequence(s) _____ missing. If intentional, please use the following format for each skipped sequence:
 (2) INFORMATION FOR SEQ ID NO:X:
 (i) SEQUENCE CHARACTERISTICS:(Do not insert any headings under "SEQUENCE CHARACTERISTICS")
 (xi) SEQUENCE DESCRIPTION:SEQ ID NO:X:
 This sequence is intentionally skipped

 Please also adjust the "(iii) NUMBER OF SEQUENCES." response to include the skipped sequence(s).
 Please also adjust the "(iii) NUMBER OF SEQUENCES." response to include the skipped sequence(s). </p> |
| <input type="checkbox"/> 9 Skipped Sequences (NEW RULES) | <p>Sequence(s) _____ missing. If intentional, please use the following format for each skipped sequence.
 <210> sequence id number
 <400> sequence id number
 000 </p> |
| <input type="checkbox"/> 10 Use of n's or Xaa's (NEW RULES) | <p>Use of n's and/or Xaa's have been detected in the Sequence Listing.
 Use of <220> to <223> is MANDATORY if n's or Xaa's are present.
 In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents. </p> |
| <input type="checkbox"/> 11 Use of "Artificial" (NEW RULES) | <p>Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules.
 Valid response is Artificial Sequence. </p> |
| <input type="checkbox"/> 12 Use of <220>Feature (NEW RULES) | <p>Sequence(s) _____ are missing the <220>Feature and associated headings.
 Use of <220> to <223> is MANDATORY if <213>ORGANISM is "Artificial Sequence" or "Unknown"
 Please explain source of genetic material in <220> to <223> section.
 (See "Federal Register," 6/01/98, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of new Rules) </p> |
| <input type="checkbox"/> 13 PatentIn ver. 2.0 "bug" | <p>Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other means to copy file to floppy disk.</p> |

O IPE

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/820,053

DATE: 04/11/2001
TIME: 15:25:33

Input Set : A:\Helx027.app
Output Set: N:\CRF3\04112001\I820053.raw

PP 1-5

Does Not Comply
Corrected Diskette Needed

3 <110> APPLICANT: Owen, Donald R.
5 <120> TITLE OF INVENTION: SHORT BIOACTIVE PEPTIDES
7 <130> FILE REFERENCE: HELX027
9 <140> CURRENT APPLICATION NUMBER: US/09/820,053
10 <141> CURRENT FILING DATE: 2001-03-28
12 <160> NUMBER OF SEQ ID NOS: 165
14 <170> SOFTWARE: PatentIn Ver. 2.1
16 <210> SEQ ID NO: 1
17 <211> LENGTH: 23
18 <212> TYPE: PRT
19 <213> ORGANISM: SYNTHETIC
21 <400> SEQUENCE: 1 Per 1.823 of Sequence Rules, the only valid <213>
22 Phe Ala Leu Ala Leu Lys Ala Leu Lys Lys Ala Leu Lys 15
23 1 5 10 15
25 Lys Ala Leu Lys Lys Ala Leu 20
26 20
29 <210> SEQ ID NO: 2
30 <211> LENGTH: 23
31 <212> TYPE: PRT
32 <213> ORGANISM: SYNTHETIC
34 <220> FEATURE:
35 <221> NAME/KEY: MOD_RES
36 <222> LOCATION: (23)
37 <223> OTHER INFORMATION: AMIDATION
39 <400> SEQUENCE: 2
40 Phe Ala Leu Ala Leu Lys Ala Leu Lys Lys Ala Leu Lys 15
41 1 5 10 15
43 Lys Ala Leu Lys Lys Ala Leu 20
44 20
47 <210> SEQ ID NO: 3
48 <211> LENGTH: 38
49 <212> TYPE: PRT
50 <213> ORGANISM: SYNTHETIC
52 <400> SEQUENCE: 3
53 Met Pro Lys Trp Lys Val Phe Lys Lys Ile Glu Lys Val Gly Arg Asn 15
54 1 5 10 15
56 Ile Arg Asn Gly Ile Val Lys Ala Gly Pro Ala Ile Ala Val Leu Gly 30
57 20 25
59 Glu Ala Lys Ala Leu Gly 35
60 35
63 <210> SEQ ID NO: 4
64 <211> LENGTH: 23
65 <212> TYPE: PRT
66 <213> ORGANISM: SYNTHETIC
68 <220> FEATURE:
69 <221> NAME/KEY: MOD_RES
70 <222> LOCATION: (23)

responses are: Unknown,
Artificial Sequence, or
Scientific name (Genus/species)
(one of the three)

(See circled
portion of item 12
on Error Summary
sheet)

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/820,053

DATE: 04/11/2001
TIME: 15:25:33

Input Set : A:\Helx027.app
Output Set: N:\CRF3\04112001\1820053.raw

71 <223> OTHER INFORMATION: AMIDATION

73 <400> SEQUENCE: 4
73 Phe Ala Lys Lys Leu Ala Lys Lys Leu Ala Lys Lys Leu 15
74 1 5

75 Ala Lys Leu Ala Leu Ala Leu
76 20

78 81 <210> SEQ ID NO: 5

82 <211> LENGTH: 38

83 <212> TYPE: PRT

84 <213> ORGANISM: SYNTHETIC

86 <220> FEATURE:

87 <221> NAME/KEY: MOD_RES

88 <222> LOCATION: (38)

89 <223> OTHER INFORMATION: AMIDATION

91 <400> SEQUENCE: 5
91 Met Pro Lys Trp Lys Val Phe Lys Lys Ile Glu Lys Val Gly Arg Asn 15
92 1 5

93 Ala Lys Lys Leu Ala Gly Pro Ala Ile Ala Val Leu Gly 30
94 Ile Arg Asn Gly Ile Val Lys Ala Gly 25

95 20

96 Glu Ala Lys Ala Leu Gly

97 35

98 102 <210> SEQ ID NO: 6

103 <211> LENGTH: 23

104 <212> TYPE: PRT

105 <213> ORGANISM: SYNTHETIC

107 <400> SEQUENCE: 6

107 Phe Ala Lys Lys Leu Ala Lys Lys Leu Ala Lys Lys Leu 15
108 5

109 1

110 Ala Lys Leu Ala Leu Ala Leu

111 20

112 115 <210> SEQ ID NO: 7

116 <211> LENGTH: 23

117 <212> TYPE: PRT

118 <213> ORGANISM: SYNTHETIC

120 <220> FEATURE:

121 <221> NAME/KEY: MOD_RES

122 <222> LOCATION: (23)

123 <223> OTHER INFORMATION: AMIDATION

125 <400> SEQUENCE: 7
125 Gly Ile Gly Lys Phe Leu His Ser Ala Lys Lys Phe Gly Lys Ala Phe 15

126 5

127 1

128 Val Gly Gly Ile Met Asn Ser

129 20

130 133 <210> SEQ ID NO: 8

134 <211> LENGTH: 23

135 <212> TYPE: PRT

136 <213> ORGANISM: SYNTHETIC

138 <220> FEATURE:

139 <221> NAME/KEY: MOD_RES

4/11/01

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/820,053

DATE: 04/11/2001
TIME: 15:25:33

Input Set : A:\Helx027.app
Output Set: N:\CRF3\04112001\I820053.raw

140 <223> LOCATION: (23)
141 <223> OTHER INFORMATION: AMIDATION
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144 Phe Ala Leu Ala Ala Lys Ala Leu Lys Lys Leu Lys 15
145 1 5
147 Lys Leu Ala Lys Lys Ala Leu
148 20
151 <210> SEQ ID NO: 9
152 <211> LENGTH: 23
153 <212> TYPE: PRT
154 <213> ORGANISM: SYNTHETIC
156 <220> FEATURE:
157 <221> NAME/KEY: MOD_RES
158 <222> LOCATION: (23)
159 <223> OTHER INFORMATION: AMIDATION
161 <400> SEQUENCE: 9
162 Phe Ala Leu Ala Leu Lys Ala Leu Lys Lys Leu Lys 15
163 1 5
165 Lys Leu Ala Lys Lys Ala Leu
166 20
169 <210> SEQ ID NO: 10
170 <211> LENGTH: 23
171 <212> TYPE: PRT
172 <213> ORGANISM: SYNTHETIC
174 <220> FEATURE:
175 <221> NAME/KEY: MOD_RES
176 <222> LOCATION: (23)
177 <223> OTHER INFORMATION: AMIDATION
179 <400> SEQUENCE: 10
180 Phe Ala Leu Ala Leu Lys Ala Leu Lys Lys Leu Lys 15
181 1 5
183 Lys Leu Ala Lys Lys Ala Leu
184 20
187 <210> SEQ ID NO: 11
188 <211> LENGTH: 21
189 <212> TYPE: PRT
190 <213> ORGANISM: SYNTHETIC
192 <220> FEATURE:
193 <221> NAME/KEY: MOD_RES
194 <222> LOCATION (21)
195 <223> OTHER INFORMATION: AMIDATION
197 <400> SEQUENCE: 11
198 Phe Ala Leu Ala Lys Leu Ala Lys Ala Lys Leu Lys 15
199 1 5
201 Ala Leu Lys Ala Leu
202 20
205 <210> SEQ ID NO: 12
206 <211> LENGTH: 19
207 <212> TYPE: PRT

4/11/01

RAW SEQUENCE LISTING
PATENT APPLICATION. US/09/820,053

DATE: 04/11/2001
TIME: 15:25:33

Input Set : A:\Helx027.app
Output Set: N:\CRF3\04112001\I820053.raw

208 <213> ORGANISM: SYNTHETIC
210 <220> FEATURE
211 <221> NAME/KEY: MOD_RES
212 <222> LOCATION: (19)
213 <223> OTHER INFORMATION: AMIDATION
215 <400> SEQUENCE: 12
216 Phe Ala Leu Ala Leu Lys Ala Leu Lys Lys Leu Lys Ala Leu Lys
217 1 5 10 15
219 Lys Ala Leu
223 <210> SEQ ID NO: 13
224 <211> LENGTH: 19
225 <212> TYPE: PRT
226 <213> ORGANISM: SYNTHETIC
228 <400> SEQUENCE: 13
229 Phe Ala Leu Ala Leu Lys Ala Leu Lys Lys Leu Lys Ala Leu Lys
230 1 5 10 15
232 Lys Ala Leu
236 <210> SEQ ID NO: 14
237 <211> LENGTH: 19
238 <212> TYPE: PRT
239 <213> ORGANISM: SYNTHETIC
241 <400> SEQUENCE: 14
242 Phe Ala Lys Lys Leu Ala Lys Lys Leu Lys Lys Leu Ala Lys Leu Ala
243 1 5 10 15
245 Leu Ala Leu
249 <210> SEQ ID NO: 15
250 <211> LENGTH: 23
251 <212> TYPE: PRT
252 <213> ORGANISM: SYNTHETIC
254 <220> FEATURE:
255 <221> NAME/KEY: MOD_RES
256 <222> LOCATION: (23)
257 <223> OTHER INFORMATION: AMIDATION
259 <400> SEQUENCE: 15
260 Val Ala Leu Ala Leu Lys Ala Leu Lys Lys Ala Leu Lys Lys Leu Lys
261 1 5 10 15
263 Lys Ala Leu Lys Lys Ala Leu
264 20
267 <210> SEQ ID NO: 16
268 <211> LENGTH: 16
269 <212> TYPE: PRT
270 <213> ORGANISM: SYNTHETIC
272 <220> FEATURE:
273 <221> NAME/KEY: MOD_RES
274 <222> LOCATION: (16)
275 <223> OTHER INFORMATION: AMIDATION
277 <400> SEQUENCE: 16
278 Phe Ala Leu Ala Leu Lys Lys Ala Leu Lys Lys Ala Leu
279 1 5 10 15

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/820,053

DATE: 04/11/2001
TIME: 15:25:33

Input Set : A:\Helx027.app
Output Set: N:\CRF3\04112001\I820053.raw

282 <210> SEQ ID NO: 17
 283 <211> LENGTH: 17
 284 <212> TYPE: PRT
 285 <213> ORGANISM: SYNTHETIC
 287 <220> FEATURE:
 288 <221> NAME/KEY: MOD_RES
 289 <222> LOCATION: (17)
 290 <223> OTHER INFORMATION: AMIDATION
 291 <400> SEQUENCE: 17
 292 Phe Ala Lys Lys Leu Ala Lys Lys Leu Ala Lys Leu Ala 15
 293 5 10
 294 1
 295 Leu
 300 <210> SEQ ID NO: 18
 301 <211> LENGTH: 19
 302 <212> TYPE: PRT
 303 <213> ORGANISM: SYNTHETIC
 305 <220> FEATURE:
 306 <221> NAME/KEY: MOD_RES
 307 <222> LOCATION: (19)
 308 <223> OTHER INFORMATION: AMIDATION
 309 <400> SEQUENCE: 18
 310 Phe Ala Lys Lys Leu Ala Lys Lys Leu Ala Lys Leu Ala 15
 311 5 10
 312 1
 313 Leu Ala Leu
 318 <210> SEQ ID NO: 19
 319 <211> LENGTH: 23
 320 <212> TYPE: PRT
 321 <213> ORGANISM: SYNTHETIC
 323 <220> FEATURE:
 324 <221> NAME/KEY: MOD_RES
 325 <222> LOCATION: (13)..(14)
 326 <223> OTHER INFORMATION: Xaa = D-lysine
 328 <400> SEQUENCE: 19
 329 Phe Ala Leu Ala Leu Lys Ala Leu Lys Ala Leu Xaa Xaa Leu Lys 15
 330 5 10
 331 Lys Ala Leu Lys Lys Ala Leu 20
 332 20
 336 <210> SEQ ID NO: 20
 337 <211> LENGTH: 15
 338 <212> TYPE: PRT
 339 <213> ORGANISM: SYNTHETIC
 341 <220> FEATURE:
 342 <221> NAME/KEY: MOD_RES
 343 <222> LOCATION: (15)
 344 <223> OTHER INFORMATION: AMIDATION
 346 <400> SEQUENCE: 20
 347 Phe Ala Lys Lys Leu Ala Lys Lys Leu Ala Lys Leu Ala Leu 15
 348 5 10
 349 1
 351 <210> SEQ ID NO: 21

Please correct this error in
subsequent sequences.

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/820,053

DATE: 04/11/2001
TIME: 15:25:34

Input Set : A:\Helx027.app
Output Set: N:\CRF3\04112001\1820053.raw

L:9 M:270 C: Current Application Number differs, Replaced Application Number
L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:329 M:341 W: (46). "n" or "Xaa" used, for SEQ ID#:19